Colorado Turns to Tolls to Finance New Roads

Tolls make new highway possible during lean times.

by Sharon McKone

With tax revenues down at all levels of government, funding for some new highway projects has been reduced. So it's no surprise that an alternative financing strategy — using private funds to pay for new road construction — is gaining more ground.

Colorado's Northwest Parkway, part of a new outer highway loop in the Denver area, is one of the latest road projects with a funding plan that uses private bonds to be paid off by tolls.

"Not a single dollar for the project, which included 10 miles of highway and 26 bridges, came from the tax rolls," says Dick Bauman, chief engineer for the Northwest Parkway Public Highway Authority, the quasi-governmental body that owns and manages the project. "The project would not have been built if it had depended on state funding," he says, "and more states are taking a close look at this financing model for new highway construction."

Few states are willing to raise taxes for new roads these days. "Most states are just barely able to maintain their existing road systems," Bauman says. "States that are financially constrained have to look at other ways to finance projects."

Design-build critical

The key to the successful construction of this 10-mile stretch of highway, which opened in November 2003, was the design-build delivery method. The advantages of design-build — faster project schedules and a commitment by the contractor to stick to a fixed price — were vital to secure financing. Because tolls are the only source of income for the NWPA, the project had to be completed within 31 months, so that the authority could meet its first scheduled bond payment on time. Any significant delays would have meant missed payments, drawing the ire of bondholders.

"Carter & Burgess was commissioned by the NWPA to serve as its project oversight engineer to provide program coordination, contract administration, and monitoring of the multi-million dollar design-build contract," says Mark Shotkoski, Carter & Burgess associate and project manager in Denver.

The project had to stick to its $420-million budget because the authority couldn't turn to the state or Uncle Sam to pay for cost overruns. It needed a contractor that would commit to a price even though only a small portion of the design was completed. By contrast, in the traditional design-bid-build delivery method, contractors typically look at the entire design plan before bidding on projects.

The contractor, Northwest Parkway Constructor, a partnership between Peter Kiewit Sons Inc. and Washington Group International, had worked on another part of the new Denver loop, E-470, so it was able to estimate costs based on its work on that previous project, which was constructed on similar terrain, says Shotkoski.

Project on target

Acting as Bauman's staff, the Carter & Burgess Project Oversight Engineering team monitored design plans, construction work, and schedule adherence to ensure that the project progressed smoothly and delivered a high-quality product. Because the NWPA chose to operate very lean, Bauman is the authority's only engineer. Thus, the Carter & Burgess team provided the essential oversight role that would normally be performed, at least partially, by state engineers on a government-financed project.

Shotkoski and the Carter & Burgess team were responsible for project quality assurance. As the owner's representative, Carter & Burgess was responsible for approving all design plans. The project's success depended on NWPA, Carter & Burgess, and all members of the design-build team working closely together so that construction could proceed on schedule. To ensure project success, the parties forged a well-coordinated, cooperative partnership early on.

Higher quality roadway

Although the NWPA was focused on staying within its schedule and budgetary constraints, the Authority didn't cut corners on aesthetic elements. "The NWPA insisted on a roadway that was of exceptional quality," Shotkoski says, primarily because drivers paying to drive on it would expect a superior road for their money.

The NWPA and Carter & Burgess negotiated changes for some design elements such as the architectural treatment of certain bridges, making roadside grading along the road less steep to allow the project to blend in better with the adjacent rolling farmland, and altering the mix design of pavement materials to improve durability. Most of these measures were fairly inexpensive to make, Shotkoski explains.

"To construct 10 miles of highway with 26 bridges in 29 months is a tremendous accomplishment for all parties involved," Shotkoski says. And, while private financing of highways in this manner isn't the answer for all areas, it does make a lot of sense where the conditions are right, he adds.

Determining whether a tollway is appropriate for a new road requires a study of traffic conditions and a forecast of what the potential toll revenue would be on the highway. In some European countries, private funding for highways supported by tolls has been common for decades. With the success of the Northwest Parkway and similar projects, it just may become an increasingly practical solution in the United States, too.